

Historic, Archive Document

Do not assume content reflects current
scientific knowledge, policies, or practices.

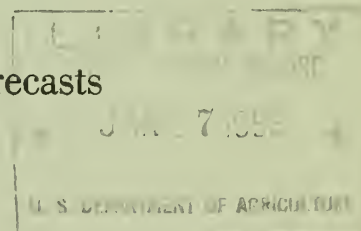
1.96
R31Sw



Checking Mountain Soil Moisture Under the Snow, an important factor in snowmelt runoff.

Federal-State Cooperative
Snow Surveys and Water Supply Forecasts
for

ARIZONA



SOIL CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY
AND WATER SUPPLY FORECAST REPORTS:

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in that bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge
River Forecast Center
U. S. Weather Bureau
712 Federal Office Building
Kansas City 6, Missouri

For current information on local river and flood conditions, reference should be made to the appropriate River District Office, listed below:

Meteorologist in Charge.....	Colorado River and
Weather Bureau Airport Station	tributaries in Arizona
3000 Sky Harbor Blvd.,	except San Juan
Phoenix, Arizona	

State of Arizona

COOPERATIVE SNOW SURVEYS and WATER SUPPLY FORECASTS
for
A R I Z O N A
(Salt, Verde, Gila and part of Lower Colorado River Basin)

Issued
January 15, 1956

Report Prepared
by
W. E. Anderson, Snow Survey Supervisor
Soil Conservation Service
39 North Sixth Avenue
Phoenix, Arizona

Issued by
Salt River Valley Water Users' Association
and
Soil Conservation Service

Robert V. Boyle
State Conservationist
Soil Conservation Service

Victor I. Corbell
President
Salt River Valley Water Users' Assn.

INDEX TO SNOW COURSES

NUMBER *	NAME	SEC	TWP	RGE**	ELEVATION	RIVER BASIN
11-P-3	Antelope Park	29	19N	8E	7300	Verde # Discontinued
9-S-1	Baldy (p)	28	7N	27E	9000	Salt-Little Colorado
10-T-1	Bear Wallow	6	12S	16E	8100	Gila
9-S-6	Beaver Head	13	4N	30E	8000	Salt-Frisco
9-S-3	Big Lake Knoll	2	5N	28E	8800	Salt-Frisco-Little Colorado .. Discontinued
7-S-3	Black Canyon	8	13S	11W***	6790	Gila
12-N-1	Bright Angel	34	33N	3E	8400	Lower Colorado
12-R-1	Camp Wood	3	16N	6W	5700	Williams-Verde
10-R-3	Canyon Creek (s)	18	11N	15E	7500	Salt
11-R-2	Casner Park (s)	19	18N	8E	6950	Verde
12-P-1	Chalender (s)	27	22N	3E	7100	Verde
8-S-3	Corner Mountain	7	10S	17W***	8850	Gila-Frisco
9-S-9	Corn Creek (p) Lat. 33°45'N. Long. 109°45'W. §	33	45N	109W	7730	Salt
9-S-7	Coronado Trail	26	5N	30E	8000	Salt-Frisco
10-R-2	Elk	31	11N	14E	7600	Salt-Little Colorado Discontinued
10-R-6	Forest Dale (s)	2	9N	21E	6000	Salt-Little Colorado
11-P-2	Fort Valley	22	22N	6E	7350	Verde #
9-R-5	Ft. Apache	18	7N	27E	9160	Salt-Little Colorado
8-S-1	Frisco Divide	31	6S	20W***	8000	Frisco-Gila
12-R-4	Gaddes Canyon	11	15N	2E	7600	Verde #
10-R-5	Gentry	36	11N	15E	7600	Salt-Little Colorado
11-P-1	Grand Canyon	21	30N	4E	7500	Lower Colorado
11-R-5	Happy Jack	30	17N	9E	7630	Verde
10-R-4	Heber (p)	28	11N	15E	7600	Salt-Little Colorado
7-S-2	Inman	6	11S	10W***	7800	Gila
12-R-2	Iron Springs	22	14N	3W	6200	Williams-Verde
9-S-2	Maverick Fork (s)(p)	13	6N	27E	9050	Salt-Little Colorado
9-R-4	McKay Peak	13	7N	24E	8250	Salt Not read
9-R-2	McNary (s)	14	8N	23E	7200	Salt-Little Colorado
9-R-1	Milk Ranch	28	8N	23E	7000	Salt
12-R-3	Mingus Mountain	3	15N	2E	7100	Verde #
8-S-2	Mogollon	2	11S	19W***	7000	Frisco-Gila
11-R-4	Mormon Lake	13	18N	8E	7350	Verde #
11-R-3	Mormon Mountain(s)	14	18N	8E	7500	Verde
11-R-1	Munds Park (s)	7	18N	7E	6500	Verde
8-S-4	N-Bar Lake	16	10S	17W***	8600	Gila
8-S-5	Negrito	6	10S	16W***	8200	Gila
9-S-4	Nutriso	23	6N	30E	8500	Salt-Frisco-Little Colorado
9-S-5	Pacheta	§ At town of Maverick, Ariz.			7800	Salt
9-N-1	Roof Butte	15	8N	6W****	8500	Little Colorado # Not read
10-T-2	Rose Canyon	15	12S	16E	7300	Gila
9-S-8	State Line	6	6S	21W***	8000	Gila-Frisco
7-S-1	Taylor Creek	20	10S	10W***	7850	Gila
9-R-3	Trout Creek	5	7N	24E	6400	Salt Not read
8-N-1	Washington Pass Lat. 36°05'N. Long. 108°50'W. §	36	05N	108W	8600	Little Colorado # Not read
13-P-1	Willow Ranch	16	21N	11W	5000	Williams
10-R-1	Woods Canyon	15	11N	13E	7640	Salt-Little Colorado Discontinued
10-S-1	Workman Creek	33	6N	14E	6900	Salt

* Number indicates location of course within coordinate rectangle, thus 9-N 1 is Course #1 in coordinate rectangle 9-N.

** All in Gila and Salt River Base and Meridian except where otherwise indicated.

*** New Mexico Principal Meridian.

**** Navajo Base.

On adjacent drainage.

(s) Soil Moisture Station installed on or in vicinity of course.

§ Unsurveyed.

(p) Storage gage installed on or in vicinity of course

* * * * *
 *
 * Present conditions indicate a runoff *
 * potential much below normal. There *
 * is practically no snow on any of the *
 * watersheds, at a time when usually *
 * half or more of the winter's total *
 * has accumulated. *
 *
 * * * * *

GENERAL

Rainfall has been much below normal through the fall months. The one significant storm that has occurred produced a good early-season snow cover, but this has practically all melted. As a result, the ground is almost completely bare of snow and the soil is hard frozen. Soil moisture conditions are good at the higher elevations, but at lower elevations, where total precipitation was less and where somewhat higher temperatures have prevailed, soil moisture conditions are only fair.

It has been a number of years since the snow cover has been as deficient at this season as it is this year. There is still time for a change in weather conditions that would improve the outlook, but much heavier than normal storms would have to occur before even average runoff could be expected. It appears probable at this time that surface water supplies may be seriously deficient this year, requiring continued heavy withdrawals of ground water and also careful planning to obtain the best usage of the limited gravity water supplies. This might include the use of special water conservation measures and in some locations changes in cropping plans or reduction of acreages.

The first seasonal water supply forecasts are usually included in the February 1 bulletin and reflect conditions that exist as of that date.

SUMMARY OF JANUARY 15 SNOW SURVEYS AND COMPARISON OF DATA
WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

WATERSHEDS	No. of Courses in Average	Snow Depth 1956 Inches	Snow Water Content in Inches			Snow Density 1956 %	1956 Water Content in percent of	
			1956	1955	1954		1955	Average
Gila River	7	0.0	0.0	1.9	0.5	1.4	---	---
Salt River	12	1.8	0.6	---	1.6	2.8	---	---
Verde River	9	0.0	0.0	---	0.4	2.7	---	---
Williams River	1	0.0	0.0	0.5	---	1.7	---	---
Lower Colorado River	4	2.7	0.5	2.4	0.8	4.1	20.8	12.2
Little Colorado River	10	0.0	0.0	---	0.6	2.6	---	---

ARIZONA SNOW SURVEYS - JANUARY 15, 1956

SNOW COVER MEASUREMENTS										
			1956		PAST RECORD				Previous Years of Record	
DRAINAGE BASIN and SNOW COURSE		No.	Elev.	Date of Survey	Snow Depth (In.)	Water Content (In.)	Water Content (In.)			
							1955	1954		1938-52 Average
<u>GILA RIVER</u>										
Nutriso	9-S-4	8500	1/16	0.0	0.0	2.7	0.8	1.9	16	
Bear Wallow <u>1/</u>	10-T-1	8100	1/15	0.0	0.0	3.9	1.5	2.4	8	
Frisco Divide	8-S-1	8000	1/16	0.0	0.0	3.1	0.2	1.7	16	
State Line	9-S-8	8000	1/16	0.0	0.0	3.5	0.0	2.2	16	
Coronado Trail	9-S-7	8000	1/16	0.0	0.0	3.0	0.6	2.7	16	
Beaver Head <u>1/</u>	9-S-6	8000	No Survey			1.9	1.1	2.6	16	
Taylor Creek	7-S-1	7850	1/15	0.0	0.0	0.0	0.0	0.7	14	
Inman	7-S-2	7800	1/15	0.0	0.0	0.0	T	0.6	9	
Rose Canyon <u>1/</u>	10-T-2	7300	1/15	0.0	0.0	2.1	1.2	0.7	8	
Mogollon	8-S-2	7000	1/15	0.0	0.0	1.0	1.6	-	3	
Black Canyon <u>1/</u>	7-S-3	6790	No Survey			0.0	0.0	-	3	
<u>SALT RIVER</u>										
Ft. Apache <u>2/</u>	9-R-5	9160	1/12	12.0	3.4	-	4.2	4.6	6	
Baldy <u>2/</u>	9-S-1	9125	1/12	T	T	-	3.9	4.5	6	
Maverick Fork	9-S-2	9020	1/12	10.0	3.7	-	2.8	5.9	6	
Nutriso	9-S-4	8500	1/16	0.0	0.0	2.7	0.8	1.9	16	
Coronado Trail	9-S-7	8000	1/16	0.0	0.0	3.0	0.6	2.7	16	
Beaver Head <u>1/</u>	9-S-6	8000	No Survey			1.8	1.1	2.6	16	
Pacheta <u>1/</u>	9-S-5	7800	No Survey			1.7	1.0	3.8	6	
Gentry	10-R-5	7600	1/12	0.0	0.0	-	0.2	2.2	6	
Heber	10-R-4	7600	1/12	0.0	0.0	-	0.2	1.9	6	
Canyon Creek	10-R-3	7500	1/12	0.0	0.0	-	0.2	2.2	6	
McNary	9-R-2	7200	1/15	0.0	0.0	1.1	1.7	2.3	16	
Milk Ranch	9-R-1	7000	1/15	0.0	0.0	0.9	1.3	1.3	15	
Workman Creek	10-S-1	6900	1/15	0.0	0.0	4.7	2.0	3.1	4	
Forest Dale	10-R-6	6430	1/15	0.0	0.0	1.0	1.4	0.8	16	
<u>VERDE RIVER</u>										
Happy Jack	11-R-5	7630	1/15	0.0	0.0	-	0.9	3.4	5	
Gaddes Canyon	12-R-4	7600	1/15	0.0	0.0	3.9	1.2	-	2	
Mormon Mountain	11-R-3	7500	1/12	0.0	0.0	-	0.2	4.9	6	
Mormon Lake <u>2/</u>	11-R-4	7350	1/12	0.0	0.0	3.3	T	3.8	9	
Fort Valley <u>2/</u>	11-P-2	7350	1/16	0.0	0.0	2.2	0.4	2.8	9	
Mingus Mountain	12-R-3	7100	1/16	0.0	0.0	2.8	0.6	1.0	9	
Chalender	12-P-1	7100	1/16	0.0	0.0	3.7	0.5	3.3	9	
Casner Park	11-R-2	6930	1/12	0.0	0.0	-	0.1	3.6	6	
Munds Park	11-R-1	6500	1/12	0.0	0.0	-	T	1.9	6	
Iron Springs <u>2/1/</u>	12-R-2	6200	No Survey			5.9	0.9	1.3	10	
Camp Wood <u>1/</u>	12-R-1	5700	No Survey			2.5	1.2	1.1	10	

1/ Not included in watershed average.2/ On adjacent drainage.3/ All averages are for less than 15 years of record in the 1938-52 period.

ARIZONA SNOW SURVEYS - JANUARY 15, 1956

DRAINAGE BASIN and SNOW COURSE		SNOW COVER MEASUREMENTS								
		1956				PAST RECORD				
		No.	Elev.	Date of Survey	Snow Depth (In.)	Water Content (In.)	Water Content (In.)			Pre- vious Years of Record
							1955	1954	1938-52 Average	
<u>3/</u>										
<u>WILLIAMS RIVER</u>										
Iron Springs <u>1/</u>	12-R-2	6200	No Survey			5.9	0.9	1.3	10	
Camp Wood <u>2/1/</u>	12-R-1	5700	No Survey			2.5	1.2	1.1	10	
Willow Ranch	13-P-1	5000	1/15	0.0	0.0	0.5	-	1.7	10	
<u>LOWER COLORADO RIVER</u>										
Bright Angel	12-N-1	8400	1/15	11.0	2.1	1.8	1.7	7.6	8	
Grand Canyon	11-P-1	7500	1/15	0.0	0.0	2.1	0.8	2.6	8	
Fort Valley	11-P-2	7350	1/16	0.0	0.0	2.2	0.4	2.8	9	
Chalender <u>2/</u>	12-P-1	7100	1/16	0.0	0.0	3.7	0.5	3.3	9	
<u>LITTLE COLORADO RIVER</u>										
Nutriso	9-S-4	8500	1/16	0.0	0.0	2.7	0.8	1.9	16	
Happy Jack	11-R-5	7630	1/15	0.0	0.0	-	0.9	3.4	5	
Gentry	10-R-5	7600	1/12	0.0	0.0	-	0.2	2.2	6	
Heber	10-R-4	7600	1/12	0.0	0.0	-	0.2	1.9	6	
Canyon Creek	10-R-3	7500	1/12	0.0	0.0	-	0.2	2.2	6	
Mormon Mountain	11-R-3	7500	1/12	0.0	0.0	-	0.2	4.9	6	
Mormon Lake	11-R-4	7350	1/12	0.0	0.0	3.3	T	3.8	9	
Fort Valley	11-P-2	7350	1/16	0.0	0.0	2.2	0.4	2.8	9	
McNary	9-R-2	7200	1/15	0.0	0.0	1.1	1.7	2.3	16	
Forest Dale	10-R-6	6430	1/15	0.0	0.0	1.0	1.4	0.8	16	

1/ Not included in watershed average.

2/ On adjacent drainage.

3/ All averages are for less than 15 years of record in the 1938-52 period.

STATUS OF RESERVOIR STORAGE - JANUARY 15, 1956

BASIN and STREAM	RESERVOIR	USABLE CAPACITY 1000s AF	USABLE STORAGE - 1000 ACRE FEET				15-Year Average 1938-52
			1956	1955	1954		
Agua Fria	Lake Pleasant <u>1/</u>	184.5	28.	24.0	32.0		18.9
Colorado	Lake Havasu <u>1/</u>	688.0	597.6	609.7	602.7		554.5
Colorado	Lake Mohave <u>1/</u>	1,810.0	1,552.	1,721.5	1,684.0		1,380.0
Colorado	Lake Mead	31,047.0	11,332.	12,508.0	16,741.0		19,832.0
Gila	San Carlos	1,205.0	69.	33.9	0.0		144.2
Verde	Bartlett <u>1/</u>	180.0	69.	46.9	31.0		38.1
Verde	Horseshoe <u>1/</u>	143.0	2.9	2.2	1.0		13.2
Salt	Roosevelt	1,381.6	211.2	570.2	634.0		397.1
Salt	Apache	245.2	241.8	177.4	241.0		168.3
Salt	Canyon	57.8	56.6	18.7	49.0		26.1
Salt	Saguaro	69.8	66.2	51.8	14.0		16.2
Little Colorado	Lyman <u>1/</u>	30.6	Report Delayed	1.5	0.4		7.4
Little Colorado	Show Low Lake	6.2	1.2	---	---		---

1/ Average is for less than 15 years of record in the 1938-52 period.

The following organizations cooperate in the Arizona snow survey work:

FEDERAL

Department of Agriculture

Soil Conservation Service

Forest Service

Apache Forest

Coconino Forest

Coronado Forest

Gila Forest

Kaibab Forest

Prescott Forest

Rocky Mountain Forest and Range Experiment Station

Department of Commerce

Weather Bureau

Arizona Section

Department of Interior

Bureau of Reclamation

Region III

Geological Survey

Arizona District

Bureau of Indian Affairs

Fort Apache Reservation

National Park Service

Grand Canyon National Park

Gila Water Commissioner, Safford, Arizona

IRRIGATION PROJECTS

Salt River Valley Water Users' Association

Phoenix, Arizona

San Carlos Irrigation and Drainage District

Coolidge, Arizona

SOUTHWEST LUMBER MILLS, INC., McNary, Arizona

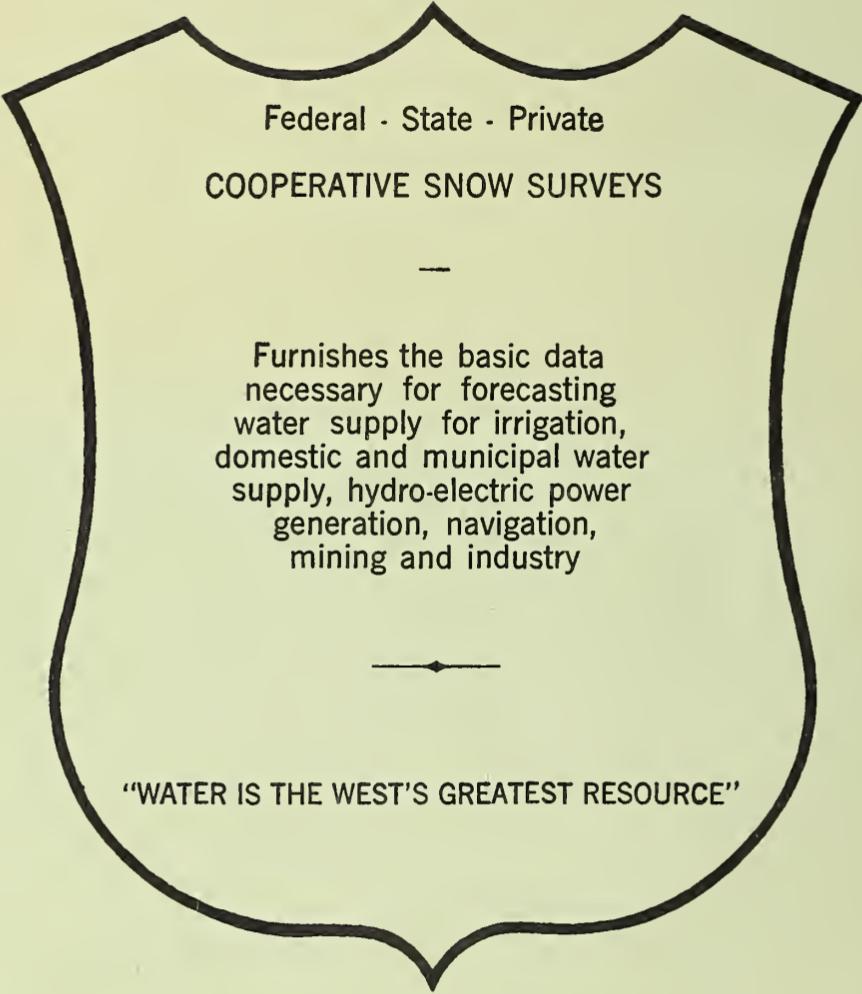
Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



LIST OF SNOW SURVEYORS

<u>SNOW COURSE</u>	<u>SURVEYOR</u>
Baldy	SCS and SRVWU
Bear Wallow	J. R. Brinkley
Beaver Head	Jess Burke
Black Canyon	Robert M. White
Bright Angel	Hillis and Hillis
Camp Wood	Mrs. C. C. Merritt
Canyon Creek	SCS and SRVWU
Casner Park	SCS and SRVWU
Chalender	Oleson and Gossard
Coronado Trail	McAdams
Forest Dale	Robinson, Karty and Bread
Frisco Divide	Weissenborn
Ft. Apache	SCS and SRVWU
Fort Valley	Rocky Mt. F. & R. Exp. Station
Gaddes Canyon	Richard Enz
Gentry	SCS and SRVWU
Grand Canyon	Lynch
Happy Jack	Emil Ryberg
Heber	SCS and SRVWU
Inman	C. H. McCauley
Iron Springs	Ernest Saxby
McNary	Robinson, Karty and Bread
Maverick Fork	SCS and SRVWU
Milk Ranch	Robinson, Karty and Bread
Mingus Mountain	Richard Enz
Mogollon	J. R. Wray
Mormon Lake	SCS and SRVWU
Mormon Mountain	SCS and SRVWU
Munds Park	SCS and SRVWU
Nutrioso	McAdams
Pacheta	Foch Phillips
Rose Canyon	J. R. Brinkley
State Line	Weissenborn
Taylor Creek	C. H. McCauley
Willow Ranch	Tiny Miller
Workman Creek	Rocky Mt. F. & R. Exp. Station





Federal - State - Private
COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"